

DATA EVALUATION RECORD

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CASE: 85

TERBUTRYN

CONT-CAT: 01 GUIDELINES: 72-1

MRID: 140836

McCann, J.A. (1970) Wigan 80W--Bluegill, "Lepomis macrochirus" #1:
Test No. 231. (U.S. Agricultural Research Service, Pesticides
Regulation Div., Animal Biology Laboratory; unpublished study;
CDL:105208-A)

REVIEW RESULTS:VALID X

INVALID _____

INCOMPLETE _____

GUIDELINE:

SATISFIED X

PARTIALLY SATISFIED _____

NOT SATISFIED _____

DIRECT RVW TIME = 2 hr

START DATE: 4/24/86

END DATE: 4/24/86

REVIEWED BY: Larry Turner

TITLE: Biologist

ORG: EEB/HED

LOC/TEL: 557-1977

SIGNATURE: Larry Turner

DATE: 6/9/86

APPROVED BY: Norman Cook

TITLE: Head - Section 2

ORG: EEB/HED

LOC/TEL: 557-7446

SIGNATURE: Norman Cook

DATE:



2020171

DATA EVALUATION RECORD

1. Chemical: Terbutryn Shaughnessy #080813

2. Test Material: Igran 80W

3. Study Type: Fish Acute Toxicity

Species Tested: Bluegill (Lepomis macrochirus)

4. Study ID: McCann, J.A. (1970) Igran 80W - Bluegill,
Lepomis macrochirus #1: Test No. 231.
(Unpublished study conducted by U.S. Agricultural
Research Service, Pesticides Regulation Div.,
Animal Biology Laboratory. MRID #140836,
Accession No. 105208.)

5. Reviewed by: Larry Turner
Biologist
EEB/HED

Signature: *Larry Turner*

Date: 6/4/86

6. Approved by: Norman Cook
Head-Section 2
EEB/HED

Signature: *Norman Cook*

Date: 6.4.86

7. Conclusions:

The study is scientifically sound. With a 96-hour LC₅₀ of 4.8 ppm to bluegill, Igran 80W is considered moderately toxic.

The study satisfies Guidelines requirements for an acute fish toxicity test with a formulated product.

8. Recommendations:

N/A.

9. Background:

10. Discussion of Individual Test:

11. Materials and Methods:

- a. Test Animals: Bluegill (Lepomis macrochirus), with an average length of 37.4 mm and average weight of 0.675 g, were obtained from Harrison Lake National Fish Hatchery.
- b. Test System: The 96-hour static bioassay was conducted in 5-gallon glass jars containing 15 L of reconstituted soft water. Temperature was 65 °F (18 °C).
- c. Dose: Test concentrations were 3.2, 4.2, 5.6, 7.5, 10.0, and 13.5 ppm.
- d. Design: Twenty fish per test concentration, divided into two jars of ten fish each. Six concentration levels.
- e. Statistics: According to Litchfield and Wilcoxon.

12. Reported Results:

The authors reported 24, 48, and 96-hour LC₅₀ values of 6.45, 5.7, and 4.8 ppm, respectively, for Igran 80W to bluegill. No mortality occurred at the lowest test concentration of 3.2 ppm. No confidence intervals were reported for the 96-hour value because of an inadequate number of concentrations producing partial mortality.

13. Study Author's Conclusions:

Bluegill 96-hour LC₅₀ = 4.8 ppm.

No QA measures were reported.

14. Reviewer's Discussion and Interpretation of the Study:

- a. Test Procedures: Procedures were generally in accordance with acceptable protocols, although a formulation was tested and the test temperature was only 18 °C.
- b. Statistical Analysis: Probit analysis according to the Stephan program showed the same LC₅₀ value as reported, and the program provided 95% confidence limits of 4.5 to 5.1 ppm. Analysis attached.
- c. Discussion/Results: With a 96-hour LC₅₀ of 4.8 ppm, terbutryn 80 W (Igran 80W) is considered moderately toxic to bluegill.

d. Adequacy of Study:

1. Classification: Supplemental (Core for formulation).
2. Rationale: Test was conducted with formulated product.
3. Repairability: No.

15. Completion of One-Liner:

One-Liner Form completed May 19, 1986.

16. CBI Appendix: N/A.

turner Terbutryn 80W Bluegill 96-hour LC50

CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB. (PERCENT)
13.5	20	20	100	9.536742E-05
10	20	20	100	9.536742E-05
7.5	20	20	100	9.536742E-05
5.6	20	18	90	2.012253E-02
4.2	20	3	15	.1288414
3.2	20	0	0	9.536742E-05

THE BINOMIAL TEST SHOWS THAT 4.2 AND 5.6 CAN BE
USED AS STATISTICALLY SOUND CONSERVATIVE 95 PERCENT
CONFIDENCE LIMITS, BECAUSE THE ACTUAL CONFIDENCE LEVEL
ASSOCIATED WITH THESE LIMITS IS GREATER THAN 95 PERCENT.

AN APPROXIMATE LC50 FOR THIS SET OF DATA IS 4.790025

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS		
3	5.066081E-02		4.799968	4.457651	5.16283

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H
7	.1703795	1

GOODNESS OF FIT PROBABILITY .9999704

SLOPE = 18.70236
95 PERCENT CONFIDENCE LIMITS = 10.98258 AND 26.42215

LC50 = 4.777668
95 PERCENT CONFIDENCE LIMITS = 4.468955 AND 5.114684

LC10 = 4.08611
95 PERCENT CONFIDENCE LIMITS = 3.576689 AND 4.383693
